UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,889	10/28/2003	Gautam Ghose	00121-000700000	7789

7590 05/10/2007

Law Office Of Leland Wiesner
1144 Fife Ave.
Palo Alto, CA 94301

EXAMINER	
CHU, GABRIEL L	

ART UNIT	PAPER NUMBER
2114	

MAIL DATE	DELIVERY MODE
05/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,889	GHOSE ET AL.	
	Examiner	Art Unit	
	Gabriel L. Chu	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-16,18-21 and 23-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-16,18-21 and 23-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Referring to claim 32, Applicant has not amended this claim in view of the incorporation of the primary/backup modules already incorporated into its parent claim 27. For the purpose of examination, this claim is treated as further claiming the subject matter of having multiple backup modules.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-4, 6-11, 18-21, 23-26, 33 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5666481 to Lewis in view of US 20020019922 to Reuter et al. and US 6629266 to Harper et al.**

4. Referring to claim 1, 18, 33, Lewis discloses initializing a primary failure analysis module for processing error events and error actions (Wherein a functioning process must have been initialized at some point.);

identifying one or more predetermined error actions and one or more error events associated with the network (Figure 4, elements 100, 102, 104. From the abstract,

"network".);

specifying an error pattern based upon a combination of one or more error events in the storage area network (Figure 4, elements 100, 102);

and associating an error action to perform in response to receiving the combination of one or more error events of the error pattern (Figure 4, elements 102, 104, 106).

Although Lewis does not specifically disclose that the network may be a storage area network and that the errors are managed by a storage virtualization controller, error handling by a storage virtualization controller in a SAN is known in the art. An example of this is shown by Reuter, see paragraphs 23-26, wherein the SAN's controller performs fault handling. A person of ordinary skill in the art at the time of the invention would have been motivated to perform fault diagnosis on a SAN because from line 39 of column 4 of Lewis, "For purposes of illustration only and not to limit generality, the present invention will now be explained with reference to its use in management and resolution of faults occurring in a typical computer-based local area network. However, one skilled in the art will recognize that the present invention is applicable to other types of communications networks." A person of ordinary skill in the art at the time of the invention would have been further motivated to perform fault diagnosis using a storage virtualization controller because, as disclosed in Lewis, fault diagnosis is performed centrally (Figure 1, element 18), and similarly, Reuter discloses fault handling by a central controller (e.g., paragraph 14).

Further, although Lewis in view of Reuter does not specifically disclose an

alternate failure analysis module configured as a backup to the primary failure analysis module to facilitate high-availability and redundancy, failing over a process is well known in the art. An example of this is shown by Harper, see for example figure 4. A person of ordinary skill in the art at the time of the invention would have been motivated to fail over a failed/failing process because, from the abstract of Harper, "for increased software dependability... avoiding the outage."

5. Referring to claim 2, Lewis discloses loading the error pattern and associated error action into a failure analysis module (Figure 4, elements 100, 102).

6. Referring to claim 3, 20, Lewis discloses initializing a failure analysis module with the one or more predetermined error actions, one or more predetermined system error events, and one or more predetermined input-output error events associated with the storage area network (From line 3 of column 8, "Rules for rules database 114 may be determined by having domain experts explicitly specify a set of rules that match specific faults to trouble ticket data fields. Each rule is a determinator. Using knowledge engineering techniques such as the "consult/implement/test" technique previously described, these rules can be refined manually, automatically, or by a combination of automatic and manual modification as the system deals with network faults, and can change as the network changes." From line 43 of column 7, "In order to select relevant trouble tickets from memory 50, the relevant data fields to be looked at are those that represent things such as bandwidth, network load, packet collision rate, and packet deferment rate." From line 16 of column 1, "Faults, as used in this disclosure, may include a failure of hardware portions of the communications network, such as

workstations or peripheral devices and failure of software portions of the network, such as software application programs and data management programs.").

7. Referring to claim 4, 21, Lewis discloses the configuration and management is performed using a centralized failure analysis module (Figure 1, element 18.).

8. Referring to claim 6, 23, Lewis discloses each of the one or more predetermined error actions describes a set of operations to accommodate the occurrence of the one or more system error events and input-output error events (Figure 4, elements 102, 104, 106.).

9. Referring to claim 7, 24, Lewis discloses the one or more error events are selected from a set of error events including predetermined system error events and predetermined input-output error events (From line 43 of column 7, "In order to select relevant trouble tickets from memory 50, the relevant data fields to be looked at are those that represent things such as bandwidth, network load, packet collision rate, and packet deferment rate." From line 16 of column 1, "Faults, as used in this disclosure, may include a failure of hardware portions of the communications network, such as workstations or peripheral devices and failure of software portions of the network, such as software application programs and data management programs.").

10. Referring to claim 8, 25, Lewis discloses each of the one or more system error events occurs when an error event occurs corresponding to a module within the storage virtualization controller (From line 13 of column 5, "Fault detection module 22 monitors local area network 8 via communications link 14, configuration management module 20 and communications link 24 to detect any undesirable network conditions that indicate a

fault has occurred. If a network fault is detected, fault detection module 22 may automatically gather and transmit appropriate fault information via communications link 16 to fault processing system 18.").

11. Referring to claim 9, 26, Reuter discloses each of one or more input-output error events corresponds to a communication error between the storage virtualization controller and servers or storage elements in the storage area network (From paragraph 24, "A sustained loss of communication between the controller 120 and mapping agent 110 also causes I/O operations to stop: either by making all mapping table entries revert to an active invalid state 240 or by adding additional mechanisms to suspend I/O operations until directed by the controller 120 to resume I/O operations.").

12. Referring to claim 10, Lewis discloses the error pattern and associated error actions are specified incrementally over time without recoding (From line 14 of column 7, "Trouble ticket 60 is then stored in trouble ticket memory 50, thus adding to the system's knowledge base that may be accessed in order to resolve future communications network faults.").

13. Referring to claim 11, Lewis discloses the error pattern is generated automatically through a logging and analysis of past error events (From figure 4, element 102.).

14. Referring to claim 19, Lewis discloses instructions in the memory when executed load the error pattern and associated error action into a failure analysis module in the memory (Figure 4, elements 100, 102, wherein the instructions are performed by and in the fault processing system.).

15. **Claims 12-16, 27-32, 34, 36 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5666481 to Lewis in view of US 20020019922 to Reuter et al. and US 6336139 to Feridun et al. and US 6446218 to D'Souza.**

16. Referring to claim 12, 27, 34, Lewis discloses discloses initializing a primary failure analysis module for processing error events and error actions (Wherein a functioning process must have been initialized at some point.);

generating one or more error events responsive to the occurrence of one or more conditions of components being monitored in the network (Figure 4, elements 100, 102, 104. From the abstract, "network".);

receiving the one or more error events over a time interval for analysis in a failure analysis module (Figure 1 shows fault detection 22 sending to the fault processing system 18, wherein events occur and are sent in a time interval.);

comparing an arrangement of the error events received against a set of error patterns loaded in the failure analysis module (Figure 4, element 102.);

and identifying the error pattern from the set of error patterns and the error action corresponding to the error pattern to perform in response to the comparison in the failure analysis module (Figure 4, element 102, 104, 106, 108.).

Although Lewis does not specifically disclose that the network may be a storage area network, error handling in a SAN is known in the art. An example of this is shown by Reuter, see paragraphs 23-26. A person of ordinary skill in the art at the time of the invention would have been motivated to perform fault diagnosis on a SAN because from line 39 of column 4 of Lewis, "For purposes of illustration only and not to limit generality,

the present invention will now be explained with reference to its use in management and resolution of faults occurring in a typical computer-based local area network. However, one skilled in the art will recognize that the present invention is applicable to other types of communications networks."

Further, although Lewis in view of Reuter does not specifically disclose the arrangement of error events is temporal, analyzing by time is known in the art. An example of this is shown by Feridun from line 4 of column 9, "Correlation rules 67 are components of or adjuncts to a given software agent. They specify a context in which to analyze or to correlate system events. Preferably, the correlation rules 67 are configured at build time for the purpose of examining a certain set of events for some observable condition. Thus, a given correlation rule 67n identifies an abstract situation of which the events it addresses are symptoms. It thus relates disparate events to a more generic problem. Typically, each rule 67 is associated with a source of events being monitored and thus a set of such rules are "correlated" to trigger a response." Further, from line 10 of column 8, "Thus, a distributed monitor (DM) within a given local runtime environment uses "events" to convey status change(s) in monitored object(s). Events are correlated, as will be seen, using an event correlator comprising a correlation engine 65 and a set of correlation rules 67." Further, form line 33 of column 9, "PassThrough Rules are more complex matching rules that are triggered by a specific sequence of events. This sequence can be in either specific or random order." A person of ordinary skill in the art at the time of the invention would have been motivated to look for a temporal arrangement because, from Feridun above, "Thus, a given

correlation rule 67n identifies an abstract situation of which the events it addresses are symptoms. It thus relates disparate events to a more generic problem." Further, a person of ordinary skill in the art at the time of the invention would have been motivated to use such an event correlator because Lewis and Reuter disclose a complex distributed environment in which events are used for fault diagnosis.

Further, although Lewis in view of Reuter and Feridun does not specifically disclose an alternate failure analysis module configured as a backup to the primary failure analysis module to facilitate high-availability and redundancyfailing over a process is well known in the art. An example of this is shown by D'Souza, from the abstract, "If the fault tolerance level is below the predefined acceptable fault tolerance level, the method also includes searching for a first suitable computer among the first plurality of computers to load another module of the software program thereon. The first suitable computer represents a computer of the first plurality of computers that does not have a module of the software program running thereon. The first suitable computer is compatible to execute the another copy of the computer program. If the first suitable computer is available, the method further includes loading the another module of the software program on the first suitable computer, registering the first suitable computer as a computer capable of servicing transaction requests pertaining to the software program after the another module of the software program is loaded onto the first suitable computer, and routing the transaction requests pertaining to the software program to the first suitable computer after the registering." A person of ordinary skill in the art at the time of the invention would have been motivated to fail over a failed/failing

process because, from the abstract of D'Souza, "maintaining a predefined acceptable fault tolerance level for a plurality of software modules implementing a software program running on a first plurality of computers coupled together in a cluster configuration in a first cluster in a clustered computer system."

17. Referring to claim 13, 28, Lewis discloses the one or more error events are converted into error event codes by a set of monitor modules monitoring the components in the storage area network (Figures 3, 7).

18. Referring to claim 14, 29, Lewis discloses the one or more error events are selected from a set of error events including predetermined system error events and predetermined input-output error events (From line 43 of column 7, "In order to select relevant trouble tickets from memory 50, the relevant data fields to be looked at are those that represent things such as bandwidth, network load, packet collision rate, and packet deferment rate." From line 16 of column 1, "Faults, as used in this disclosure, may include a failure of hardware portions of the communications network, such as workstations or peripheral devices and failure of software portions of the network, such as software application programs and data management programs.").

19. Referring to claim 15, 30, Lewis discloses each of the one or more system error events occurs when an error event occurs corresponding to a module within the storage virtualization controller (From line 13 of column 5, "Fault detection module 22 monitors local area network 8 via communications link 14, configuration management module 20 and communications link 24 to detect any undesirable network conditions that indicate a fault has occurred. If a network fault is detected, fault detection module 22 may

automatically gather and transmit appropriate fault information via communications link 16 to fault processing system 18.").

20. Referring to claim 16, 31, Reuter discloses each of one or more input-output error events corresponds to a communication error between the storage virtualization controller and servers or storage elements in the storage area network (From paragraph 24, "A sustained loss of communication between the controller 120 and mapping agent 110 also causes I/O operations to stop: either by making all mapping table entries revert to an active invalid state 240 or by adding additional mechanisms to suspend I/O operations until directed by the controller 120 to resume I/O operations.").

21. Referring to claim 32, D'Souza further discloses that there may be plural backup modules (D'Souza, from the abstract, "If the fault tolerance level is below the predefined acceptable fault tolerance level, the method also includes searching for a first suitable computer among the first plurality of computers to load another module of the software program thereon. The first suitable computer represents a computer of the first plurality of computers that does not have a module of the software program running thereon. The first suitable computer is compatible to execute the another copy of the computer program. If the first suitable computer is available, the method further includes loading the another module of the software program on the first suitable computer, registering the first suitable computer as a computer capable of servicing transaction requests pertaining to the software program after the another module of the software program is loaded onto the first suitable computer, and routing the transaction requests pertaining to the software program to the first suitable computer after the registering.").

22. Referring to claim 36, Lewis discloses initializing a primary failure analysis module for processing error events and error actions (Wherein a functioning process must have been initialized.);

generating one or more error patterns automatically through logging of error events and analysis of the error events occurring in the network (Figure 1 shows fault detection 22 sending to the fault processing system 18, wherein events occur and are sent in a time interval. Figure 4, element 102.);

suggesting that the one or more error patterns generated from the analysis receive at least one error action to be performed in the event the one or more error patterns occur on the storage area network; and associating an error action to perform in response to each of the suggested one or more error patterns generated from the analysis (Figure 4, 104-108.).

Although Lewis does not specifically disclose that the network may be a storage area network, error handling in a SAN is known in the art. An example of this is shown by Reuter, see paragraphs 23-26. A person of ordinary skill in the art at the time of the invention would have been motivated to perform fault diagnosis on a SAN because from line 39 of column 4 of Lewis, "For purposes of illustration only and not to limit generality, the present invention will now be explained with reference to its use in management and resolution of faults occurring in a typical computer-based local area network. However, one skilled in the art will recognize that the present invention is applicable to other types of communications networks."

Further, although Lewis in view of Reuter does not specifically disclose the

arrangement of error events is temporal, analyzing by time is known in the art. An example of this is shown by Feridun from line 4 of column 9, "Correlation rules 67 are components of or adjuncts to a given software agent. They specify a context in which to analyze or to correlate system events. Preferably, the correlation rules 67 are configured at build time for the purpose of examining a certain set of events for some observable condition. Thus, a given correlation rule 67n identifies an abstract situation of which the events it addresses are symptoms. It thus relates disparate events to a more generic problem. Typically, each rule 67 is associated with a source of events being monitored and thus a set of such rules are "correlated" to trigger a response." Further, from line 10 of column 8, "Thus, a distributed monitor (DM) within a given local runtime environment uses "events" to convey status change(s) in monitored object(s). Events are correlated, as will be seen, using an event correlator comprising a correlation engine 65 and a set of correlation rules 67." Further, form line 33 of column 9, "PassThrough Rules are more complex matching rules that are triggered by a specific sequence of events. This sequence can be in either specific or random order." A person of ordinary skill in the art at the time of the invention would have been motivated to look for a temporal arrangement because, from Feridun above, "Thus, a given correlation rule 67n identifies an abstract situation of which the events it addresses are symptoms. It thus relates disparate events to a more generic problem." Further, a person of ordinary skill in the art at the time of the invention would have been motivated to use such an event correlator because Lewis and Reuter disclose a complex distributed environment in which events are used for fault diagnosis.

Further, although Lewis in view of Reuter and Feridun does not specifically disclose an alternate failure analysis module configured as a backup to the primary failure analysis module to facilitate high-availability and redundancy, failing over a process is well known in the art. An example of this is shown by Harper, see for example figure 4. A person of ordinary skill in the art at the time of the invention would have been motivated to fail over a failed/failing process because, from the abstract of Harper, "for increased software dependability... avoiding the outage."

23. **Claim 35 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5666481 to Lewis in view of US 20020019922 to Reuter, "threshold" by IEEE, and "graphical user interface" by Microsoft Computer Dictionary (herein MSCD) and US 6629266 to Harper et al.**

24. Referring to claim 35, Lewis discloses discloses initializing a primary failure analysis module for processing error events and error actions (Wherein a functioning process must have been initialized at some point.);

identifying one or more predetermined error actions and one or more error events associated with the network; specifying an error pattern based upon a combination of one or more error events in the storage area network, presented through a user interface with corresponding determination values (From line 48 of column 5, "Fault processing system 18 also includes a user interface module 38 coupled to fault resolution system 32 via communications link 40 and trouble-ticketing system 34 via communications link 42. User interface module 38 allows a user to edit and control proposed fault resolutions generated by fault resolution system 32 using keyboard 44."

From line 3 of column 8, "Rules for rules database 114 may be determined by having domain experts explicitly specify a set of rules that match specific faults to trouble ticket data fields. Each rule is a determinator. Using knowledge engineering techniques such as the "consult/implement/test" technique previously described, these rules can be refined manually, automatically, or by a combination of automatic and manual modification as the system deals with network faults, and can change as the network changes." From line 6 of column 10, "Critic-based adaptation module 124 allows a user, through user interface 38 to edit a proposed displayed potential solution presented by propose step 106 or to enter his or her own solution to the outstanding network fault. Critic-based adaptation is another form of adaptation that allows the system to adapt previous resolutions to novel network faults. Critic-based adaptation includes adding, removing, reordering, or replacing steps in the proposed retrieved solution. For example, considering the first retrieved trouble ticket described in connection with FIG. 6 above, a maintenance and repair person could include the data field "network.sub.-- load" and refine the solution by providing a two-place function f(F,N) that calculates the amount of adjustment based on the values of file "transfer.sub.-- throughput" and "network load".");

and associating an error action presented through the user interface to perform in response to receiving the combination of one or more error events of the error pattern that satisfy the determination value requirements (Figure 4, elements 102, 104, 106).

Although Lewis does not specifically disclose that the network may be a storage area network and that the errors are managed by a storage virtualization controller,

error handling by a storage virtualization controller in a SAN is known in the art. An example of this is shown by Reuter, see paragraphs 23-26, wherein the SAN's controller performs fault handling. A person of ordinary skill in the art at the time of the invention would have been motivated to perform fault diagnosis on a SAN because from line 39 of column 4 of Lewis, "For purposes of illustration only and not to limit generality, the present invention will now be explained with reference to its use in management and resolution of faults occurring in a typical computer-based local area network. However, one skilled in the art will recognize that the present invention is applicable to other types of communications networks." A person of ordinary skill in the art at the time of the invention would have been further motivated to perform fault diagnosis using a storage virtualization controller because, as disclosed in Lewis, fault diagnosis is performed centrally (Figure 1, element 18), and similarly, Reuter discloses fault handling by a central controller (e.g., paragraph 14).

Although Lewis in view of Reuter does not specifically disclose the determination value may be a threshold value, using thresholds to determine actions is very well known in the art. An example of this is shown by IEEE, "A value of voltage or other measure that a signal must exceed in order to be detected or retained for further processing." A person of ordinary skill in the art at the time of the invention would have been motivated to use a threshold because, from IEEE, "to be detected or retained for further processing" and further from line 9 of column 9 to line 40 of column 10, Lewis performs value judgment for exemplary throughput and load; values for which threshold limitations would clearly be beneficial in judging.

Further, although Lewis in view of Reuter does not specifically disclose the user interface may be a GUI, GUIs are very well known in the art. An example of this is shown by MSCD, "A type of environment that represents programs, files, and options by means of icons, menus, and dialog boxes on the screen." A person of ordinary skill in the art at the time of the invention would have been motivated to use a GUI because, from MSCD, "The user can select and activate these options by pointing and clicking with a mouse or, often, with the keyboard.", and further, GUIs simplify the interface experience, providing obvious benefits in accessing a particular element and intuitive operation.

Further, although Lewis in view of Reuter, "threshold", and "GUI" does not specifically disclose an alternate failure analysis module configured as a backup to the primary failure analysis module to facilitate high-availability and redundancy, failing over a process is well known in the art. An example of this is shown by Harper, see for example figure 4. A person of ordinary skill in the art at the time of the invention would have been motivated to fail over a failed/failing process because, from the abstract of Harper, "for increased software dependability... avoiding the outage."

Response to Arguments

25. Applicant's arguments with respect to claims 1-4, 6-16, 18-21, 23-36 have been considered but are moot in view of the new ground(s) of rejection.

26. Applicant's arguments, see page 12, filed 22 March 2007, with respect to 35 USC 101 directed to non-statutory subject matter have been fully considered and are persuasive. The 101 rejection of claims 33 and 34 has been withdrawn.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See notice of references cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel L. Chu whose telephone number is (571) 272-3656. The examiner can normally be reached on weekdays between 8:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gabriel L. Chu
Primary Examiner
Art Unit 2114

gc